

REMARKS/ARGUMENTS

Claims 5-17 are pending in this application. By this Amendment, Applicant amends Claim 5.

Claim 5 was objected to for allegedly containing a minor informality. Applicant has amended Claim 5 to delete the feature that the Examiner alleged contained the minor informality. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this objection.

Claims 5-16 were under 35 U.S.C. § 103(a) as being unpatentable over Takeshima et al. (U.S. 2002/0195901) in view of Ishitoko et al. (U.S. 2002/0134155). Claim 17 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Takeshima et al. in view of Ishitoko et al., and further in view of Nakamura et al. (U.S. 2003/0107300). Applicant respectfully traverses the rejections of Claims 5-17.

Claim 5 has been amended to recite:

A piezoelectric electroacoustic transducer comprising:
a piezoelectric diaphragm that is supplied with a periodic signal across electrodes thereof to bend and vibrate in a thickness direction;
a casing including supports on an inner portion thereof to support four corners of a bottom surface of the piezoelectric diaphragm;
terminals fixed to the casing, each having an inner connection portion exposed near the supports;
a first elastic adhesive disposed between a periphery of the piezoelectric diaphragm and the inner connection portions of the terminals to secure the piezoelectric diaphragm to the casing;
a conductive adhesive disposed between the electrodes of the piezoelectric diaphragm and the inner connection portions of the terminals across a top surface of the first elastic adhesive to electrically connect the electrodes of the piezoelectric diaphragm to the inner connection portions of the terminals;
a second elastic adhesive filling and sealing a gap between the periphery of the piezoelectric diaphragm and the inner portion of the casing; and
an overamplitude-preventing receiver disposed on the casing to limit an amplitude of vibration of the piezoelectric diaphragm to a predetermined range; wherein

the overamplitude-preventing receiver includes a top surface that is arranged at a height lower than the supports and below an area in which the conductive adhesive is applied, such that a gap is

provided between the top surface of the overamplitude-preventing receiver and the bottom surface of the piezoelectric diaphragm; and the second elastic adhesive fills the gap between the bottom surface of the piezoelectric diaphragm and the top surface of the overamplitude-preventing receiver. (emphasis added)

The Examiner alleged that Takeshima et al. teaches all of the features recited in Applicant's Claim 5, except for the feature of "an overamplitude-preventing receiver disposed on the casing to limit an amplitude of vibration of the piezoelectric diaphragm to a predetermined range." The Examiner further alleged that Ishitoko et al. teaches an overamplitude-preventing receiver 2c disposed on the casing for the benefit of reducing excessive vibration. Applicant notes that the Examiner incorrectly referred to element "3c" in Ishitoko et al. instead of "2c". Ishitoko et al. does not disclose any element 3c, and element 2c of Ishitoko et al. is disclosed as being a projection which limits excessive displacement of the vibrator 7. Thus, the Examiner concluded that it would have been obvious "to include an overamplitude-preventing receiver [as taught by Ishitoko et al.] on the casing with Takeshima device for the benefit described above." Applicant respectfully disagrees.

In the description of the prior art rejection of Applicant's Claim 5 over Takeshima et al. in view of Ishitoko et al., the Examiner alleged that Takeshima et al. teaches "a second elastic adhesive (15) filling and sealing a gap between the periphery of the piezoelectric diaphragm and the inner portion of the casing[,]
the second elastic adhesive fills a gap between the bottom surface of the piezoelectric diaphragm and a top surface of the overamplitude-preventing receiver" (emphasis added). The Examiner then acknowledged, "However, **Takeshima does not teach an overamplitude-preventing receiver** disposed on the casing to limit the amplitude of vibration of the piezoelectric diaphragm to a predetermined range" (emphasis added).

As acknowledged by the Examiner, Takeshima et al. fails to teach or suggest any overamplitude-preventing receiver whatsoever. Therefore, contrary to the Examiner's allegations, Takeshima et al. cannot possibly teach or suggest a gap between a bottom surface of a piezoelectric diaphragm and a top surface of an overamplitude-preventing

receiver, and certainly does not and cannot possibly teach or suggest the feature of “the second elastic adhesive fills the gap between the bottom surface of the piezoelectric diaphragm and the top surface of the overamplitude-preventing receiver” as recited in Applicant’s Claim 5.

To more clearly distinguish Applicant’s claimed invention over the combination of Takeshima et al. and Ishitoko et al., Applicant’s Claim 5 has been amended to recite the feature of “the overamplitude-preventing receiver includes a top surface that is arranged at a height lower than the supports and below an area in which the conductive adhesive is applied, such that a gap is provided between the top surface of the overamplitude-preventing receiver and the bottom surface of the piezoelectric diaphragm.” Support for this feature is found, for example, in paragraphs [0054] to [0056] of Applicant’s originally filed Substitute Specification and in Figs. 8, 11A, and 11B of Applicant’s originally filed drawings.

As clearly shown in Fig. 3 of Ishitoko et al., the top surface of each of the protrusion portions 2c, which the Examiner alleged correspond to the overamplitude-preventing receiver recited in Applicant’s Claim 5, is **not** arranged at a height below the supports 2b, and instead the top surface of each of the protrusion portions 2c of Ishitoko et al. are disposed **at the same height and in the same plane** as the supports 2b.

Thus, Ishitoko et al. clearly fails to teach or suggest the feature of “the overamplitude-preventing receiver includes a top surface that is arranged at a height lower than the supports and below an area in which the conductive adhesive is applied, such that a gap is provided between the top surface of the overamplitude-preventing receiver and the bottom surface of the piezoelectric diaphragm” as recited in Applicant’s Claim 5.

Since Ishitoko et al. fails to teach or suggest any overamplitude-preventing receiver which is arranged at a height below the supports and, therefore, fails to teach or suggest any gap provided between a top surface of an overamplitude-preventing receiver and a bottom surface of a piezoelectric diaphragm, Ishitoko et al. certainly does not and cannot teach or suggest the feature of “the second elastic adhesive fills the gap

between the bottom surface of the piezoelectric diaphragm and the top surface of the overamplitude-preventing receiver” as recited in Applicant’s Claim 5.

Therefore, Applicant respectfully submits that Takeshima et al. and Ishitoko et al., applied alone or in combination, fail to teach or suggest the unique combination and arrangement of features recited in Applicant’s Claim 5.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Takeshima et al. in view of Ishitoko et al.

Nakamura et al. was relied upon to cure deficiencies of Takeshima et al. and Ishitoko et al. However, Nakamura et al. fails to teach or suggest the features of “the overamplitude-preventing receiver includes a top surface that is arranged at a height lower than the supports and below an area in which the conductive adhesive is applied, such that a gap is provided between the top surface of the overamplitude-preventing receiver and the bottom surface of the piezoelectric diaphragm” and “the second elastic adhesive fills the gap between the bottom surface of the piezoelectric diaphragm and the top surface of the overamplitude-preventing receiver” as recited in Applicant’s Claim 5. Thus, Nakamura et al. fails to cure the deficiencies of Takeshima et al. and Ishitoko et al.

In view of the foregoing amendments and remarks, Applicant respectfully submits that Claim 5 is allowable. Claims 6-17 depend upon Claim 5, and are therefore allowable for at least the reasons that Claim 5 is allowable.

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

Application No. 10/596,718
August 5, 2009
Reply to the Office Action dated May 18, 2009
Page 9 of 9

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

Dated: August 5, 2009

/Joseph R. Keating #37,368/
Attorneys for Applicant

KEATING & BENNETT, LLP
1800 Alexander Bell Drive, Suite 200
Reston, VA 20191
Telephone: (571) 313-7440
Facsimile: (571) 313-7421

Joseph R. Keating
Registration No. 37,368